WHAT IS CLAIMED IS:

1. A radio receiver comprising:

a first front-end down-conversion mixer that down-converts an RF signal from a first low noise amplifier (LNA) into respective intermediate frequency I and Q signals.

2. The radio receiver of claim 1, wherein a quadrature mixer performs a down-conversion of the RF signal and the mixer matches phase and gain in the I/Q signal.

3. The radio receiver of claim 2, wherein the phase and gain are matched to achieve an amount of image rejection.

4. The radio receiver of claim 1, wherein the amount of image rejection is about 40 dB.

5. The radio receiver of claim 1, wherein a gain stage and a filtering stage are used to partially reject out-of-band signals and to block noise from propagating into a following stage.

6. The radio receiver of claim 1, wherein a second down-conversion mixer converts a low-IF signal into a base-band signal.

7. The radio receiver of claim 6, wherein the second mixer translates a static or dynamic DC offset in frequency domain, resulting in a carrier leakage and the carrier leakage is located at the same frequency of the second LO frequency.

8. The radio receiver of claim 6, wherein a gain stage is used to block noise from being input into a following stage.

9. The radio receiver of claim 6, wherein a notch filter is used to eliminate a carrier leakage caused by static or dynamic DC-offset.

10. The radio receiver of claim 8, wherein the notch filter includes at least one of an elliptic filter and a chebyschef-II type filter.

11. The radio receiver of claim 1, wherein a plurality of local oscillator (LO) signals including at least a first LO signal and a second LO signal are generated using a phase locked loop (PLL) circuit.

12. The radio receiver of claim 10, wherein the second LO signal is generated using a direct digital frequency synthesizer (DDFS).

13. The radio receiver of claim 10, wherein the second LO signal is generated using a divided reference clock input with filtering to reject harmonic signals.

14. A radio receiving method comprising:

using a first front-end down-conversion mixer to down-convert an RF signal from a first low noise amplifier (LNA) into respective intermediate frequency I and Q signals.

15. The radio receiving method of claim 13, wherein a gain stage and a filtering stage are used to partially reject out-of-band signals and to block noise from propagating into a following stage.

16. The radio receiving method of claim 13, wherein a second down-conversion mixer converts a low-IF signal into a base-band signal.

17. The radio receiving method of claim 13, wherein a gain stage is used to block noise from being input into a following stage.

18. The radio receiving method of claim 13, wherein a low-IF architecture is used to receive data.

19. A radio receiving method comprising:

using a down-conversion operation to obtain a desired signal that is centered at DC and where a DC-offset becomes a carrier leakage signal at a second LO frequency.

20. The radio receiving method of claim 18, wherein a notch filter is used to suppress the carrier leakage to an acceptable level.

21. The radio receiving method of claim 18, wherein harmonics of a second LO signal are designed with a spectral purity to achieve an acceptable signal-to-noise ratio (SNR).

22. The radio receiving method of claim 21, wherein a frequency sum of a first LO signal and a second LO signal is the same as the desired RF signal frequency from the antenna.

23. The radio receiving method of claim 21, wherein a frequency of a first LO signal is the same as a frequency of a second LO signal.

24. The radio receiving method of claim 23, wherein the first LO signal is very high frequency close to the incoming carrier signal from the antenna and the second LO signal is close to DC and the overall receiver architecture becomes a low-IF architecture.